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THE INFLUENCE
OF
CLOTHING AND PHYSICAL ATTRACTIVENESS
ON
FIRST IMPRESSIONS

by

JEAN PAULL NIELSEN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

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THE UNIVERSITY OF ALBERTA
FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, a thesis entitled The Influence of Clothing and Physical Attractiveness on First Impressions submitted by Jean Paull Nielsen in partial fulfilment of the requirements for the degree of Master of Science.

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Date June 17/1975

ABSTRACT

The Influence

of

Clothing and Physical Attractiveness

on

First Impressions

by

Jean Paull Nielsen, Master of Science

University of Alberta, 1975

Major Professor: Dr. Anne Kernaleguen

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The purpose of this study was to investigate the effect of the attractiveness of the clothed body, and the attractiveness of the face and head, in first impression formation. As well, the influence of these factors on visual fixation patterns was examined. The theoretical basis for this study involved the operation of physical attractiveness associated sterectypes; the influence of clothing on first impressions; and the analysis of eye fixations to discern high information areas in a visual field.

The sample was non-random and consisted of thirty, female, University of Alberta students. Using a semantic differential person perception instrument, subjects recorded their impressions of a number of stimulus person pictures. Each stimulus situation represented a systematic pairing of faces of varying levels of attractiveness and clothed bodies of varying levels of attractiveness. Eye movement data was recorded using an oculometer system.

The data were analyzed using a 3 x 3 Latin Square analysis of variance and Pearson product-moment correlation. Results of the statistical analyses showed facial attractiveness to be a significant factor in the perception of physical attractiveness of the total unit; social and professional happiness; and social desirability. Attractiveness of the clothed body was found to exert a significant effect in the perception of bourgeois orientation. The analyses of variance performed on a number of the individual scale ratings indicated facial attractiveness to be a significant factor in the perception of certain personality dimensions; and attractiveness of the clothed body to be a significant factor in the perception of certain personality dimensions. None of the experimental variables were found to be significant in the proportion of time in which the head area was visually fixated, or the proportion of time

in which the clothed body was visually fixated. The correlation results indicated that as level of physical attractiveness increased, so did the perception of social and professional happiness and social desirability.

(145 pages)

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CHAPTER I

INTRODUCTION

Statement of the Problem

First impressions are formed very quickly, and they may be derived from an extremely restricted amount of information. Not only are judgments made in the particular areas where direct information is available, but inferences are drawn and predictions and assessments are made in a variety of areas where specific information may be lacking. The generation of such a comprehensive impression from a limited amount of data is made possible by the application of implicit theories of personality or stereotypes, which are socially derived concepts concerning the relationships between personal characteristics. First impressions are enduring. The initial judgments which are made of others tend to be retained, even though additional information may become available which contradicts the original impression. First impressions can significantly influence the character, as well as the amount of future social interaction.

Physical attractiveness is an important stimulus

source in initial contact situations. Consistent sets of psychological traits are implicitly associated with different levels of physical attractiveness. Beauty is not in the eye of the beholder, but rather is a culturally derived concept. Not everyone has the attributes to match the socially held definition of beauty, and those that believe their appearance to be inferior often exert an extensive effort to remedy the situation. "Conventional wisdom" holds that through the use of a variety of supplementary goods, physical attractiveness can be enhanced. The industries dealing in personal accoutrements have encouraged this notion and of course capitalize on it in terms of financial return. Clothing is one factor which is believed by many to be instrumental in upgrading attractiveness level. The fashion industry has certainly attempted to sustain and perpetuate this notion.

Clothing has been found to significantly influence first impressions. Some fragments of research have also indicated a connection between clothing and physical attractiveness, but there has been no substantial empirical investigation of the role which clothing actually plays in determining physical attractiveness.

In an initial contact situation where stimulus information is limited, visual data may be a major source of input to the impression formation process. The

location and duration of eye fixations can provide important information about perception. The areas which receive the highest fixation densities are the areas of greatest informativeness. What constitutes an area of high information value is determined by the information which the observer is attempting to extract. Instructions pertaining to the requirement to form an impression of the stimulus person should orient the observer to fixate those areas which provide important information for first impression formation.

The purpose of this study is to investigate the effect of the attractiveness of the clothed body, and the attractiveness of the face and head, in first impression formation. As well, the influence of these factors on visual fixation patterns will be examined. This study is unique in that although growing bodies of research exist in the areas of physical attractiveness, clothing, and eye movements, only fragmentary empirical research attempts have been made to investigate the possible relationships between these variables.

The existing social context renders an investigation of the nature and operation of first impressions to be a pursuit which can potentially have consequences of practical importance. In a society which is increasingly becoming more urbanized and organic, the number of persons who interact with one another on a functionally

interdependent, limited contact basis, is increasing. In such a context, first impression data comprises a large proportion of the information on which important decisions are based.

Objectives

1. To investigate whether the attractiveness of face and head and the attractiveness of the clothed body affect the perceived attractiveness of the total head and clothed body unit.

2. To investigate whether the attractiveness of face and head and the attractiveness of the clothed body affect the perception of certain first impression dimensions.

3. To investigate the perceived attractiveness of the total head and clothed body unit in terms of its correlation with certain first impression dimensions.

4. To investigate whether the attractiveness of face and head and the attractiveness of the clothed body affect visual fixation patterns.

CHAPTER II

REVIEW OF LITERATURE

Person Perception

The process involved in the formation of impressions of others is person perception.

> Person perception refers to the processes by which man comes to know and to think about other persons, their characteristics, qualities, and inner states.
>
> Tagiuri, 1954, p.395

Many studies have dealt with the formation of impressions in initial contact situations. First impressions are formed very rapidly and they may be based on extremely limited stimulus data (Allport, 1937, p.500). First impressions are enduring. Even though more information about the person may be available, the "primacy" effects of first impressions have consequences for the manner in which persons are later evaluated (Luchins, 1957; Horn, 1968).

The judgments which are made of others in an initial contact situation can significantly influence later social interaction. The amount of social interaction can be affected in that, if the first impression is poor, a

future meeting may be avoided. If the first impression is good, further encounters may be desired (Ryan, 1966). The nature of the interaction which does occur is also influenced by the judgments people make of one another (Cooley, 1922).

A Gestalt approach to the formation of impressions has been favored by a number of person perception theorists. Persons are seen as a unit, and impressions are formed of the entire person. A person is not perceived as the totality of a number of discrete traits, rather each trait which is perceived interacts with other perceived traits and the final impression is a dynamic whole which is not predictable from the sum of the individual traits.

A number of studies have dealt with the relative dominance of certain traits in determining the final impression. Asch (1946), Kelley (1950), and Wishner (1960) studied the centrality of the warm/cold variable. Wishner (1960) concluded that a trait is central to the extent which it correlates with other response traits. The centrality of a trait therefore is dependent on what other response traits are present.

Bruner and Tagiuri (1954) directed their attention to how impressions are generated from partial cues. They proposed that inferences are derived from a naive implicit theory of personality. A concept of the relationship between traits is learned through the socialization

process. Hastorf, Schneider and Polefka (1970) have suggested that implicit personality theories are very similar to stereotypes. Both allow a large amount of perceptual data to be assimilated efficiently.

> . . . stereotypes and implicit personality theories are inevitable consequences of our needs as perceivers to make sense of the world. There simply is not enough time to treat every new situation in its full particularity, nor would we be able to store the full uniqueness of each event in our memories.
>
> Hastorf, Schneider & Polefka, 1970, p.46

Wishner's (1960) trait correlation work provides a model for the operation of implicit personality theories. They can be conceived of as a correlation matrix of traits which is held by each person (Hastorf, Schneider, & Polefka, 1970).

Impressions of persons are formed from the data which is available. Warr and Knapper (1968) distinguish between "direct" and "indirect" person perception on the basis of the presence or absence of an intervening communication. Indirect person perception is mediated by an intervening communication, and is more restricted in the stimulus information which is available. This restriction is due either to the action of human intermediaries, or the nature of the communication. Examples of indirect perceptual information are newspaper stories, photographs, films, etc. Because less information is available in the

indirect person perception situation, the importance of what is present is correspondingly greater.

Physical Attractiveness

An individual's physical characteristics provide important stimulus information to those involved in an initial contact situation. "Our physical appearance is the one personal characteristic which is obvious and accessible to others in almost all social interactions." (Berscheid and Walster, 1974, p.158). Physical attractiveness is one aspect of appearance which is increasingly gaining recognition as an important social psychological variable.

The folk belief regarding physical attractiveness has been that "beauty is in the eye of the beholder". With respect to human physical attractiveness however this does not appear to be true.

> Despite the frequently heard assertion that individual differences in criteria for physical attractiveness are impossibly vast, and that beauty is entirely in the eye of the beholder, people typically show a good deal of agreement in their evaluations of others.
>
> Berscheid and Walster, 1974, p.181

Fairly high inter-judge reliabilities have been found to

exist in the rating of physical attractiveness. This reliability is maintained even when the judges differ in sex (Murstein, 1972; Iliffe, 1960); when the judges differ in age (Cross & Cross, 1971; Iliffe, 1960); and when the judges differ in occupational status (Iliffe, 1960). Inter-judge reliabilities are somewhat lower when ratings are made in a naturalistic setting (models appear in person) compared to a laboratory situation where photographs are used as stimulus material. The reliabilities in the naturalistic setting however are still acceptably high. (Berscheid, Dion, Walster & Walster, 1971).

The explanation which has been suggested to account for this consensus among raters of physical attractivess involves cultural factors.

> The high interjudge agreement on physical attractiveness indicates that beauty is not in the eye of the beholder; rather, there are cultural definitions of physical attractiveness which males and females learn to use.
>
> Cavior & Dokecki, 1973, p.51

A number of factors have been found to influence the perception of physical attractiveness to some degree. Wiggins, Wiggins and Conger (1968) found that certain personality and background factors were associated with the female somatic preferences which were expressed by men. The subject's own level of physical attractiveness has been shown to influence ratings of physical

attractiveness when a rating scale method is used. Cavior (1973) has reported that the lower the subject's physical attractiveness self concept, the more frequently the attractive category is used. This finding is explained as an attempt to maintain self esteem.

The relationship between the judge and the stimulus person may affect the perception of physical attractiveness. Cavior and Dokecki (1973) found that knowing the person being judged influenced the physical attractiveness rating which was given. The ratings given by knowers and non-knowers however were closely correlated.

Social factors can also influence the rating of physical attractiveness. Kopera, Maier and Johnson (1971) found that interacting groups gave lower judgments of physical attractiveness than did coacting groups. Cavior (1973) uses the concept of social competition to explain this phenomenon. In an interacting group, a motivational factor of those involved may be to have their judgment appear "better" than another's judgment. They therefore downrate physical attractiveness.

Physical attractiveness is a variable which operates significantly in a wide range of social behaviors. It has been found to be related to popularity among children (Dion, 1973); popularity and dating preferences among adolescents (Cavior & Dokecki, 1973); popularity and

dating among college students (Walster, Aronson, Abrahams & Rottman, 1966; Berscheid, Dion, Walster & Walster, 1971); actual dating partners (Murstein, 1972; Silverman, 1971); and actual marriage partners (Cavior & Boblett, 1972).

As well, the interaction between the physical attractiveness of male psychotherapists and the physical attractiveness of female clients has been found to affect the number of therapeutic sessions (Cavior & Glogower, 1973). Archer (1973) found that physical attractiveness was related significantly, but negatively, to measures of power, dominance and leadership for both males and females.

Using a simulated jury situation, Sigall and Ostrove (1973) found that subjects gave longer sentences of imprisonment to unattractive defendants compared to attractive defendants. When the crime was attractiveness related however, the attractive defendant was given the greater sentence. Another type of behavior which has been studied using physical attractiveness as a variable has been helping behavior. Athanasiou and Greene (1973) found that attractive "ladies-in-distress" received more offers of assistance than did unattractive "ladies-in-distress".

Although physical attractiveness has been found to be related to a large number of different types of social behavior, there has been little investigation of it as a

causal factor. An exception is the Cavior and Dokecki (1973) study where causality was considered. It was found that for the most and least attractive categories, causal direction seemed to be from physical attractiveness to interpersonal attraction. For the average attractiveness category, physical attractiveness and interpersonal attraction appeared to be interactive.

An explanation which has been used to account for the potent influence of physical attractiveness is the existence of a physical attractiveness stereotype. Attractiveness levels may be perceptually related to certain psychological traits and through a process of trait inference, physical attractiveness may evoke a consistent set of expectancies (Miller, 1970a). The physically attractive person may be preferred because the personality traits which are unconsciously associated with them have a higher reward value for persons who may potentially interact with them (Byrne, London & Reeves, 1968).

> If we believe that a beautiful person embodies an ideal personality, and that he or she is likely to garner all the world's material benefits and happiness, the substantial lure of beauty is not surprising.
>
> Berscheid & Walster, 1972, p.74

Miller (1970a) found significant effects for physical attractiveness on fifteen of the seventeen dimensions of the Jackson and Minton (1963) Adjective Preference Scale.

No sex of judge effect was found, but the sex of the stimulus person was found to exert an influence, usually in a manner which reflected sex role stereotyping. The social desirability of the dimensions under consideration were not independently determined, but based on intuitive judgement, Miller concluded:

> A consistent pattern emerges, that of the unattractive person being associated with the negative or undesirable pole of the adjective scales and the highly attractive person being judged significantly more positively.
>
> Miller, 1970a, p.242

Dion, Berscheid and Walster (1972) found that attractive people were considered to possess most of the personality traits which in a previous study had been determined to be "socially desirable". No effects were found for sex of judge, sex of stimulus person, or their interaction. Physically attractive people were also perceived to ultimately experience happier and more fulfilling social and professional lives. The only dimension in which the physically attractive were not expected to excel was potential parental competence.

Dermer (in press) quasi-replicated the Dion, Berscheid and Walster (1972) study to assess the generality of the "what is beautiful is good" stereotype. The stimuli and the subjects used were same sex (female) peers. The findings indicated that the attribution of favorability was affected by the physical attractiveness of the persons

making the judgment. Unattractive subjects favored the intermediate attractiveness stimuli persons over the unattractive stimuli persons, however, they did not reliably favor the attractive stimuli persons over the intermediate attractiveness stimuli persons. An explanation offered for this finding is that women of both high and average attractiveness levels can perceive themselves as attractive and therefore destined for favorable experiences. This however is not the case for unattractive women. Dermer's finding that the favorability of personality attributions increased monotonically with the physical attractiveness of the stimuli person supported the Dion, Berscheid and Walster (1972) findings. While the attribution of favorability for unattractive stimuli was reliably less than for intermediate attractiveness stimuli ($p=.00007$), the attributions for attractive stimuli were not however reliably more favorable than those for intermediate attractiveness stimuli ($p=.10$). This seemed to imply that for females responding to other females, unattractive persons are disadvantaged - "what is ugly is bad", rather than attractive persons being advantaged - "what is beautiful is good" (Dion, Berscheid & Walster, 1972). The results of this study also showed the association of some socially undesirable traits with increasing levels of physical attractiveness. Those judged high in physical

attractiveness were considered to be more vain and egotistical, more likely to experience marital disaster, and more likely to be bourgeois. Dermer suggests that the stereotyping of attractive females as holding socially undesirable bourgeois orientations may be a consequence of their perceived ability to attract high status males, as well as the adorning advertisements appearing in the mass media which feature highly attractive models.

Miller (1970b) studied the effect of physical attractiveness on the perception of internal and external control. It was found that persons low in physical attractiveness were perceived to be more external.

> . . . physically attractive individuals are likely to be perceived as masters of their fate, as individuals who behave with a sense of purpose and out of their own volition, whereas unattractive individuals are more likely to be seen as coerced and generally influenced by others or by environmental conditions.
>
> Miller, 1970b, p.108

There is indication that the stereotype is strongest at high levels of physical attractiveness. Miller (1970a) found that the number of differences perceived between stimulus persons of different sex was greater at lower levels of attractiveness. The inference which Miller makes from this finding is that as attractiveness level decreases, other factors, such as sex, may play a larger role in influencing interpersonal perception.

It has been found that the physical attractiveness

stereotype is learned very early. Dion (1973) found that the behavioral expectancies held by pre-school children (3 years to 6.5 years old) of unknown peers differing in physical attractiveness were consistent with adult stereotypes. The attractive children were perceived to behave more prosocially, and to exhibit less antisocial behavior than were the unattractive children.

The influence of physical attractiveness may decrease as more information becomes available. Byrne, London & Reeves (1968) found that physical attractiveness exerted less influence on interpersonal attraction when attitudinal data concerning the stimulus person was made available. But as Berscheid and Walster (1974) point out

> . . . it is clear that, even if the stereotype influences only initial reactions, it probably will have some enduring impact upon the individual.
>
> Berscheid & Walster, 1974, p.205

Physical attractiveness as a very influential factor in interpersonal behavior is perhaps becoming more evident due to the fact that our society is increasingly becoming more functionally interdependent, thus necessitating a greater number of limited contact social interactions.

> In fact, one might go so far as to speculate that the apparent increase in the importance of physical attractiveness as evidenced by the proliferation of cosmetic and bodily hygiene products, its emphasis in the media and in advertisements, is not only a result of our affluent society, but a consequence of the fact that we are all experiencing more one-time and few-time social contacts than ever before in the history of man.
>
> Berscheid & Walster, 1974, p.206

Clothing and First Impression Formation

Clothing can provide sensory data for person perception. Ryan (1966) refers to clothing as one of the "clues" which are used in first impression formation. Clothing is an intimate and inseparable part of the perceptual field within which an individual is located (Douty, 1963). Arnheim (1959) has classified the manner in which a person dresses as a type of expressive behavior in that it provides information to others that lets them draw conclusions about personality and temporary states of mind. The influence of clothing on a number of different aspects of person perception have been investigated.

Hoult (1954) photographically exchanged heads and bodies so that the same head appeared on differently clothed bodies. When the person was unknown to the

subjects, it was found that differences in clothing resulted in differences in the judgments which were made regarding certain personal characteristics. Hamid (1968) had subjects rank photographs of female figures selected from magazines on ten concepts. The facial expression and hair color were similar, but dress variables were "systematically varied to cover the wide range of female dress" (p.904). Significant agreement was found for both male and female judges on five of the concepts. Agreement on an additional three concepts was found to be significant for male judges only. Another set of judges was asked to rank order only the faces on the same set of concepts. No significant agreement was found. Hamid concluded from these findings that consistent stereotypes originate primarily from dress cues rather than from facial characteristics.

Rosencranz (1962), using a modified Thematic Apperception Test found that respondents noted and commented on incongruities in dress in the stimulus pictures. It was found that clothing awareness was higher among subjects in higher socio-economic groups, and that they used the variable of clothing more in their descriptions of the people in the stimulus pictures than did subjects in lower socio-economic groups.

Douty (1963) investigated the influence of clothing which varied in affective tone on perceptions of personal

traits based on the Yang-Yin classification. Significant differences were found in the ratings of social status and personal traits which were given to three of the four stimulus persons. Mahannah (1968) studied the influence of dress and hair color on the perception of Yang-Yin personality traits. Differences in hair color, differences in dress color, and the interaction of these two were found to have a significant effect. Sorenson (1966) found that in a simulated employment interview, neatness of clothing contributed to a favorable impression and inappropriateness of clothing contributed to an unfavorable impression. McGhee (1968) found a relationship between the defined mood of a costume and the mood rating assigned to the person wearing the costume.

The influence of clothing on pre-school children's first impression of whether an adult female was "happy" or "unhappy" was studied by LaToush (1969). The contrasting clothing types were simple/detailed, casual/formal, out-moded/fashionable. The choices which the children made between the clothing types did not indicate that clothing was a factor in their perception. However, they did refer to clothing when questioned about the reasoning involved in their choices.

Hamid (1969) had subjects rate photos of adolescents under four dress conditions; high school uniform, casual clothes, working clothes, and evening clothes; on a set of

concepts. Semantic differential ratings were found to be markedly influenced by the dress condition. In a later study, Hamid (1972) used stimuli in which two dress variables, make-up and glasses, were systematically manipulated. Trait ratings were found to be markedly influenced by these variables. However, when asked to indicate what had influenced their impression only a few mentioned glasses, and none referred to make-up.

A study which investigated the influence of fashionableness of clothing on esteem ratings was carried out by Jones (1969). It was found that in-fashion figures received higher esteem ratings than out-of-fashion figures in five of the six stimuli conditions. Subjects having high fashion interest were found to accord greater importance to fashion than did those with low fashion interest. Values and social security/insecurity were not found to influence the ratings. Gibbins (1969) investigated the communicative aspects of women's clothing in relation to fashionability. Fifteen and sixteen year old female subjects rated pictures of currently fashionable clothing in terms of the attributes of the person who would wear them. A high degree of inter-judge agreement was found. Gibbins concluded

> . . . not only are judges prepared to make judgments about the kind of person who would wear given clothes, but . . . they agree to a very large extent indeed, both on the characteristics of the wearer of a particular outfit and upon the differences between the wearers of different outfits.
>
> Gibbins, 1969, p.306

The influence of clothing style on the perception of personality was considered by Thomas (1971). Subjects viewed pictures of models in clothing of different styles and rated them on a number of personality traits. The procedure was repeated one week later. In this second test, some of the models appeared in different clothing. The results indicated that clothing did influence the perception of personality traits. Thomas also found that the subjects own personality characteristics affected the perception of personality traits in the stimulus persons.

Conner (1974) investigated the degree to which clothing affects impression formation. Three dimensions of impression were considered; athletic, social and intellectual. It was found that the person variable exerted the strongest influence on the athletic impression; considerably less influence on social impression; and minimal influence on intellectual impression. The costume variable exerted the strongest influence on socialness, and considerably less influence on athletic and intellectual impression. The interaction of costume and person exerted the strongest effect on

social impression, and less on athletic and intellectual impression. Conner concluded that the degree to which clothing influences impression formation depends on the dimension being considered.

There are growing bodies of research concerning the influence of physical attractiveness on person perception, and the influence of clothing on person perception. There has been little empirical work however which has explored the relationship between these two. Perrin (1921) reported a +.83 relationship between "good taste" in dress and physical attractiveness. Spiegel (1950) studied children's concept of human beauty. Although the number of esthetic elements mentioned by the children were few, those most frequently referred to were the profusion of clothing, hair and eyes. Spiegel concluded

> The emphasis on the envelope of the body is so overwhelming one has the impression that children consider beauty something one puts on and takes off with clothes and cosmetics, and not an inherently intrinsic part of the body.
>
> Spiegel, 1950, p.14

Spiegel also found that the child's concept involved perceptions that a beautiful person was good and an ugly person was bad. The subjects used in this study were children in a psychiatric setting. It is not known if these findings would be supported if a sample of children from a less special population were used.

Athanasiou and Greene (1973) used clothing to vary the

physical attractiveness level of their subjects. A panel of judges was used to validate the adequacy of this manipulation.

In the study by Hoult (1954), the heads of unknown male stimulus persons were rated for attractiveness. A number of outfits of clothing were independently rated for "appropriateness" for college students. The most attractive head was then photographically placed over the least appropriate clothing; the second most attractive head was placed over the second least appropriate clothing, and so on, until the least attractive head appeared with the most appropriate clothing. These pictures were then rated on a number of dimensions, including physical attractiveness, by the college student subjects who had originally rated the heads. The results indicated that the change in ratings were positively associated with the clothing rankings. This meant that the higher ranked clothing was associated with the persons who rose in attractiveness rating. The lower ranked clothing was associated with persons who were rated lower on attractiveness.

Eye Movements

Information concerning the location within a stimulus field where visual data is acquired may be a useful variable to consider in investigations of first impression formation. Yarbus (1967, p.3) states that "Records of eye movements illustrate the course of the process of perception".

In the viewing of complex objects it has been found that the eye fixations are not random but are related to the configuration which is being viewed (Baker & Loeb, 1973). The eye tends to rest longer on some elements than on other elements. Eye fixations have been linked to perception.

> Since little or no perception occurs between points of fixation, the eye movement parameters relevant for visual perception are number, duration and location of eye fixations.
>
> Gould & Schaffer, 1965, p.317

There are relatively few areas within pictures which receive a high concentration of the gaze. Mackworth and Morandi (1967) found that one-half to two-thirds of the area of the stimulus pictures which they used received very few fixations, and that two-thirds of all fixations occurred in one-tenth of the total area of the pictures. Yarbus (1967) found that when subjects' eye movements are recorded for a number of minutes, the extra time is used

not to examine other aspects of the picture, but to re-examine the same areas.

A fundamental problem in the study of perception is to find adequate ways to specify stimuli (Schissler, 1969). Much of the work which has been done in visual perception where the variable of eye movement is considered, has used stimulus figures which can be represented as an outline. Description of these nonsense figures involves such parameters as the number of angles and directional change in contours. Techniques of psychophysical analysis have been developed largely from the use of these quite simple, objective stimuli. In dealing with visual perception in the real world however, very complex, subjective stimuli must be considered. The descriptive terminology developed to deal with simpler stimuli is often not adequate to describe this type of visual material. But, if real world visual stimuli cannot be precisely defined, compromises should be made in the area of specification rather than in the stimulus material which is used.

> Investigators interested in the study of perception of real visual materials are impatient with restrictions to random shapes. If the real visual world is complicated, so let it be. If compromises are to be made, such investigators would rather compromise in terms of depth of specification than upon subject matter.
>
> Pollack & Spence, 1968, p.41

The features in a visual field which are fixated more than other features have been studied by a number of

investigators. Mackworth and Morandi (1967) found that in an unstructured viewing situation, dominant fixation regions always contained unpredictable contours or unusual details. Areas of texture, especially when they were smooth and therefore predictable , were seldomly fixated. Pollack and Spence (1968) , although they did not carry out such an extensive content analysis of fixation areas, did conclude that sharp contours received a high degree of fixation and uniform color masses received a low degree of fixation. Yarbus (1967) listed a number of factors which in his studies had not been found to account for visual fixation of certain areas. These factors were the degree of detail; the brightness or darkness of certain elements; color distribution; and the material of the stimulus picture or how it was made, providing that it was flat or nearly flat.

A number of investigators have concluded that it is the degree of actual or potential information content of certain areas in a visual field which acccunts for differing degrees of fixation (Buswell, 1935; Yarbus, 1967; Mackworth & Morandi, 1967; Schissler, 1969). The process involved in the identification of high information areas within a visual field does not require scanning, but rather is guided by peripheral vision.

> . . . objects providing essential information are by no means uniformly distributed. Usually they are localized in small areas of the field of vision. In these circumstances the peripheral portion of the retina usually finds the object or element of an object which contains or may contain essential information, and consequently a process resembling reconnaissance takes place; this information is perceived and analyzed in greater detail by means of the foveal part of the retina, when directed towards the object.
>
> Yarbus, 1967, p.2

Mackworth and Morandi (1967) provided support for the position that the processing of information content is mediated by peripheral vision with their finding that two-thirds to three-quarters of their stimulus pictures were scarcely fixated.

Although there is agreement that it is the relative information value of certain areas of a visual stimulus which positively accounts for visual fixation, there is variation in the definition of what constitutes informativeness. Buswell (1935) and Yarbus (1967) considered informativeness as referring to the meaning or significance which certain elements contributed to the total perception. Yarbus (1967) noted that attention may be drawn to certain elements that do not necessarily give important information, but which in the opinion of the subject may. This could be elements which are unusual in the particular circumstance, unfamiliar or incomprehensible.

Mackworth and Morandi (1967) developed a more

systematic and objective procedure to assess informativeness. They divided pictures into one inch squares and had subjects rate them on a ten point scale of informativeness, or how easy it would be to recognize on another occasion. The total picture was then shown to another group of subjects. It was found that fixation choices were primarily confined to the parts of the picture which had been rated as high information areas. Pollack and Spence (1968) used a similar technique of having subjects rate small squares of the stimulus picture on a scale of informativeness. Their criterion of informativeness was the extent to which the information of the picture would be altered if pieces were removed from it. The individually rated squares were then used in visual search tasks by another group of subjects. It was found that errors and search times were lowest for the highest information rated segments. Schissler (1969) had subjects rate small squares of a picture on their importance in contributing to the meaning or interest of the picture. Moderate correlations were found between the informativeness ratings and eye fixations for one inch squares. Larger correlations were found when larger units than a one inch square were considered.

The reliability of this method of rating informativeness has been established to some degree. Schissler (1969) found high correlations between different

subjects performing the same rating task. A high correlation was also found between groups using different scaling procedures. Schissler used only one picture in his study but reliability with more than one picture has been established by Mackworth and Morandi (1967).

Another concept of informativeness has been used by Faw and Nunnally (1967). They saw information value as being determined by the difficulty encountered by a subject in assimilating the content of a visual display. Complexity and novelty were considered to be dimensions of it. The hypotheses of the Faw and Nunnally (1967) study were also based on the assumption that affective tone, or position on a pleasant-unpleasant continuum was instrumental in determining eye fixations. Pairs of stimuli, including a number of real life scenes, differing in information value or affective tone were used. The frequency with which each member of the pair was fixated was then determined. Both affective tone and information value, or structure, were found to be influential in directing eye movements. The more valuable stimuli dominated the less valuable stimuli. The more complex and more novel stimuli dominated the less complex and novel stimuli. Affective tone was found to be a more potent determinant of fixation than novelty or complexity under most conditions.

The informative parts of a picture may vary depending

on the information which the observer is attempting to extract. Mackworth and Morandi (1967) and Schissler (1969) used unstructured viewing situations where the subject freely examined the stimulus picture. Buswell (1935) and Yarbus (1967) found that instructions given prior to the viewing dramatically influenced the details and pattern of fixation.

> Depending on the task in which a person is engaged, i.e., depending on the character of the information which he must obtain, the distribution of the points of fixation on an object will vary correspondingly, because different items of information are usually localized in different parts of an object.
>
> Yarbus, 1967, p. 192

The results of some research have lead to the suggestion that the location and ordering of major fixations is a more meaningful eye movement parameter than is the actual number of fixations. Noton and Stark (1971) have found that different paths are followed by the same subject when viewing different patterns, and by different subjects when viewing the same pattern. The term scanpath was adopted to refer to this fixed path of eye movement which was characteristic of a given subject viewing a given pattern. The results of the Noton and Stark (1971) study show that the scanpath is followed intermittently, but repeatedly, during the learning of a novel pattern. The first few eye movements during recognition of the pattern follow the same path. These researchers postulate

that the scanpath perhaps constitutes an important part of the memory on which recognition is based. A sensory component, a feature of the pattern, may be alternately recorded with a motor component, the eye movement required to reach the next feature. The appearance of the scanpath in initial eye movements during recognition may represent the matching of the pattern with an internal representation.

Studies of eye movements where human forms have been used as stimuli are few. Yarbus (1967) found that faces attract more attention than do figures. Munn (1961, p.570) studied the eye movements of women when they were viewing male stimulus persons. It was found that 32% of the total of fixations was on the face. Within the face, fixations are predominantly on the eyes, mouth and nose (Yarbus, 1967). One of the stimulus pictures used in the Mackworth and Morandi (1967) study was a pair of eyes behind a mask. The eyes were the only areas receiving an informativeness rating greater than eight on the ten-point scale, and they had fixation readings of 5-8% of the total. (A fixation rating greater than 2% of the total was considered to be significant).

Eye movements in relation to clothing have received very little attention in empirical studies. Godfrey (1970) investigated the color fabric preferences of introverts and extraverts. One of the variables

considered was eye movement. Paired stimuli of pictures of warm and cool colored fabric samples were used. The time spent looking at the warm and the cool colored components of the stimuli, and the choice and non-choice components of the stimuli were then computed. No significant differences were found between the introvert and the extravert groups when considered separately. However, when introverts and extraverts were taken together as one group, significant differences were found between time spent looking at choice and non-choice stimulus elements.

CHAPTER III

METHODS AND PROCEDURE

Included in this chapter are the theoretical framework, hypotheses, selection of the sample, description of the instruments, preparation of the stimulus material, description of the experimental procedure, operational definitions, directional rating of variables and the methods used to analyze the data.

Theoretical Framework

Impressions of others are formed very rapidly, and they may be based on extremely limited stimulus data. The inferences from which an impression originates may be derived from a naive implicit theory of personality (Bruner & Tagiuri, 1954). The nature and function of implicit personality theories are similar to those of stereotypes (Hastorf, Schneider & Polefka, 1970).

Physical attractiveness is one aspect of appearance which significantly influences a wide range of social behavior, including first impressions. Inter-rater

reliability in the rating of physical attractiveness is high. The variables of sex, age and occupational status of judge have generally not been found to influence physical attractiveness ratings significantly. The potent influence of physical attractiveness has been attributed to the existence of a physical attractiveness stereotype (Miller, 1970a; Dion, Berscheid & Walster, 1972; Dermer, in press). Attractiveness levels are perceptually related to certain psychological traits, and through a process of trait inference, physical attractiveness may evoke a consistent set of expectancies (Miller, 1970a).

Clothing is a variable which has been found to significantly influence first impressions. Clothing has also been identified as a factor which is influential in determining the level of physical attractiveness (Hoult, 1954; Athanasiou & Greene, 1973).

Visual information can be a very significant source of data in initial contact person perception. Eye fixations are relevant parameters for the study of visual perception (Gould & Schaffer, 1965). Within a stimulus field, there are relatively few areas which receive a high concentration of the gaze (Mackworth & Morandi, 1967). The areas which do receive a high density of eye fixations are those which are high in informativeness (Buswell, 1935; Yarbus, 1967; Mackworth & Morandi, 1967; Schissler, 1969). Areas of highest informativeness may vary

depending on the information which the observer is attempting to extract (Buswell, 1935; Yarbus, 1967).

Hypotheses

1. The attractiveness of face and head will significantly influence the physical attractiveness rating of the total head and clothed body unit.

2. The attractiveness of the clothed body will significantly influence the physical attractiveness rating of the total head and clothed body unit.

3. The attractiveness of face and head will significantly influence the personality trait ratings of the total head and clothed body unit.

4. The attractiveness of the clothed body will significantly influence the personality trait ratings of the total head and clothed body unit.

5. The attractiveness of face and head will significantly influence the social desirability rating of the total head and clothed body unit.

6. The attractiveness of the clothed body will significantly influence the social desirability rating of the total head and clothed body unit.

7. The attractiveness of face and head will significantly influence the social and professional happiness rating of the total head and clothed body unit.

8. The attractiveness of the clothed body will significantly influence the social and professional happiness rating of the total head and clothed body unit.

9. The attractiveness of face and head will significantly influence the bourgeois orientation rating of the total head and clothed body unit.

10. The attractiveness of the clothed body will significantly influence the bourgeois orientation rating of the total head and clothed body unit.

11. There will be a significant correlation between the physical attractiveness rating of the total head and clothed body unit, and the social desirability rating of the total head and clothed body unit.

12. There will be a significant correlation between the physical attractiveness rating of the total head and clothed body unit, and the social and professional happiness rating of the total head and clothed body unit.

13. There will be a significant correlation between the physical attractiveness rating of the total head and clothed body unit, and the bourgeois orientation rating of the total head and clothed body unit.

14. The attractiveness of face and head will significantly influence the proportion of time in

which the head area is visually fixated.

15. The attractiveness of the clothed body will significantly influence the proportion of time in which the head area is visually fixated.

16. The attractiveness of face and head will significantly influence the proportion of time in which the clothed body is visually fixated.

17. The attractiveness of the clothed body will significantly influence the proportion of time in which the clothed body is visually fixated.

Sample

The sample for this study consisted of thirty, female University of Alberta students. A non-random sampling procedure was used. Prospective subjects were approached at various locations on campus and asked if they would be

willing to participate in a study concerned with first impression formation. It was explained that the testing would require about thirty minutes and they would be paid two dollars. If an affirmative response was received a scheduled testing time was arranged.

Instruments

Background Information

1. Age

2. Year in university

3. Faculty

Infrared Computer Based Oculometer

The apparatus used to record eye movements was an infrared computer based oculometer system developed at the University of Alberta (Petruk & Hunka, 1974). The system

was designed for the study of visual response in learning. The data which is monitored and recorded is eye pointing co-ordinates and pupil dilatien. The principle of operation is based on the corneal reflection method of oculography. Infrared light is used to illuminate the eye. The image of the eye is projected to an infrared television camera which is connected to a small digital computer through the use of a special interface unit. The computer analyzes the displacement of the corneal reflection relative to the pupil center. It is this displacement of the corneal reflection from the center of the pupil which is functionally related to the displacement of the point of fixation from the source of infrared light (Petruk & Hunka, 1974, p.19), and thus is the information which is used to calculate the eye pointing co-ordinates. The corneal displacement, as well as a measure of pupil dilation is recorded approximately once every thirtieth of a second.

The Petruk and Hunka infrared computer based oculometer system possesses a number of features which makes it an appropriate choice for use in various types of eye movement studies. It will operate effectively under most normal lighting conditions. Through the use of infrared light, the measuring and recording apparatus is made relatively unobtrusive. A minimum of unnatural restraint is imposed on the subject through the use of

only a chin rest. The computer and its peripheral devices can be physically isolated in a room which is separate from the one in which the subject is located. Data is output onto nine-track magnetic tape and thus is easily accessible for computer analysis.

The reliability, validity and accuracy of the infrared computer based occulometer have been established and documented (Petruk & Hunka, 1974). Proof of performance was established by assessing the performance of the system in a series of simple, definable sub-tasks which were known to comprise the overall task. These findings were then generalized to describe the performance of the total system.

Person Perception Instrument

The subjects' perception of the personality characteristics of the stimulus persons was recorded using an adaptation of the instrument developed by Dion, Berscheid and Walster (1972). This instrument uses a semantic differential technique to assess the perception of twenty-seven personality dimensions. Warr and Knapper (1968) discuss the semantic differential technique in considerable detail. They conclude that as an index of person perception, the semantic differential instrument

appears to be both reliable and valid.

The semantic differential ratings were made on a six point scale. The adverbial quantifiers chosen to represent the scale positions were "extremely", "quite", and "slightly". These adverbs were chosen because they have been found to define rating positions which are about equidistantly spaced (Heise, 1969).

A number of additional scales were added to the original instrument. These were derived from another section of the Dion, Berscheid and Walster (1972) study where subjects were asked to rank the stimulus persons in terms of friendliness, enthusiasm, physical attractiveness, social poise, and trustworthiness. In an effort to make the response mode as consistent as possible, these dimensions were altered to appear in six point semantic differential form. Perception of social poise was considered to be adequately encompassed by the poised-awkward scale already appearing in the instrument. Four additional scales were therefore included. They were: friendly-unfriendly; enthusiastic-unenthusiastic; physically attractive-physically unattractive; trustworthy-untrustworthy.

In a preliminary study, Dion, Berscheid and Walster (1972) had subjects denote the polar term of each scale which they considered to be most representative of a socially desirable person of either sex. A set of

socially desirable traits was then formulated based on the criteria that two-thirds of the male subjects and two-thirds of the female subjects showed agreement in their ratings. Seventeen traits met these standards. They were poised, modest, strong, interesting, self-assertive, sociable, independent, warm, genuine, kind, exciting, sensitive, sexually warm, sincere, enthusiastic, trustworthy, friendly. To obtain an index of social desirability, the responses to these scales were summed.

In intercorrelating experimental cells Dermer (in press) found substantial negative correlations between the modest-vain item and other scales. Similar findings of another researcher are referenced in the Dermer study. Based on these results, the modest-vain item was eliminated from the social desirability index to be analyzed separately.

The complete set of thirty-one scales appeared in one of three random orders. A second set of items was included to assess perception of social and professional happiness and bourgecis orientation. These items were derived from Dion, Berscheid and Walster (1972) and Dermer (in press). Subjects were asked to comment on the probability that certain statements were representative of the person they had just seen. Probability was recorded using a six point scale of likelihood; extremely unlikely, very unlikely, somewhat unlikely, somewhat likely, very

likely, extremely likely.

The items dealing with social and professional happiness were: likely to lead an exciting life; likely to experience personal fulfillment; likely to be successful in chosen occupation. Those items assessing bourgeois orientation were: likely to sympathize with oppressed people (reversed); belief in money and wealth as primary ingredients for a happy life; likely to be snobbish and a social status seeker. The complete person perception instrument and the accompanying instructions appear in Appendix I.

Stimulus Material

The stimulus material consisted of slides showing systematic arrangements of heads of varying levels of attractiveness paired with clothed bodies of varying levels of attractiveness. Decisions regarding the particular heads and clothed bodies to be used were based on the attractiveness rankings obtained for a number of pictures of faces and clothed bodies. The facial photographs were obtained from a recent college yearbook. They were standard front-view head and shoulder poses taken by a professional photographer. The institution

from which the yearbook was obtained was a considerable distance from the University of Alberta where the testing was done, and the probability that the judges who were ranking the pictures would know the stimulus persons was considered to be small. However, a question asking the subject if they knew any of the stimulus persons was included on the ranking form. An affirmative response to this question resulted in one response form being eliminated from consideration. Of the set of facial photographs chosen to be ranked, there were no instances where the person wore glasses or would generally be considered physically grotesque or extremely ugly. Similarly, the facial photographs were unrepresentative of an attractiveness level of unquestionable extreme beauty. Seventeen clothed bodies (heads removed) were selected from recent fashion magazines. The criteria involved in selecting the clothing was that it be a short length dress or blouse/skirt ensemble and that the garment be modelled in a front-facing position. A standard adhered to in the selection of the photographs of both the faces and clothed bodies to be ranked, was that they appear to be representative of the mesomorph body type.

The set of twenty-one facial pictures and the set of seventeen pictures of clothed bodies were separately ranked for attractiveness by thirty students enrolled in an introductory clothing course. All pictures were in the

form of black and white photographs. The ranking method was chosen because it is influenced by fewer perceiver variables than is the method of rating on a scale (Cavior & Dokecki, 1973). All subjects were instructed separately and ranked the pictures in isolation from others. Kendall's coefficient of concordance (W) was used to test the agreement in rankings. Inter-judge agreement was highly significant as indicated in Table 1. Based on these rankings, a set of three pictures of faces and a set of three pictures of clothing were selected such that three levels of attractiveness; low, high and medium, were represented by each set. The high attractiveness picture was the one having the greatest positive deviation from the mean of the total summed ranks. The low attractiveness picture was the one having the greatest negative deviation from the mean. The medium attractiveness picture was the one having the smallest deviation (positive or negative) from the mean. This procedure of selection was carried out for both faces and clothing in all but the facial medium attractiveness category. In this instance it was necessary to select the third smallest deviation from the mean to represent the medium attractiveness category. Of the two pictures which had smaller deviations, one had an unusual posture and the other a hair style which would present difficulties in maintaining a natural appearance when they were

photographically paired with the various clothed bodies.

Using a photographic process, each face was paired with each clothed body. This resulted in a total of nine separate pictures. The final form of the stimulus pictures was as black and white slides.

Table 1. Kendall's coefficients of concordance for attractiveness rankings of faces and clothed bodies

	W	chi²	df	p
Faces	.475	246.89	20	<.001
Clothing	.109	52.42	16	<.001

Experimental Procedure

The nine stimulus photographs were divided into three sets of three photographs each. The photographs were divided in such a way that each set included views of all three faces and all three clothed bodies. No face or clothed body appeared more than once in each set. The subjects were sequentially assigned to three groups; A, B and C. Each group viewed one set of the stimuli. The stimuli viewed by Group A were medium facial attractiveness/medium clothed body attractiveness; low facial attractiveness/high clothed body attractiveness; high facial attractiveness/low clothed body attractiveness. Group B viewed high facial attractiveness/ medium clothed body attractiveness; low facial attractiveness/low clothed body attractiveness; medium facial attractiveness/high clothed body attractiveness. The stimulus categories viewed by Group C were high facial attractiveness/high clothed body attractiveness; medium facial attractiveness/low clothed body attractiveness; low facial attractiveness/medium clothed body attractiveness.

The viewing procedure included the recording of eye movement data by the infrared computer based oculometer. Stimulus material appeared in the form of slides displayed using a Singer Caramate. The subject was positioned in

such a manner that their viewing of the stimulus material was recorded by the cculcmeter. During the testing period the subject was alone in the testing rocm. The changing of slides was remotely controlled from the adjoining room which also contained the mini computer and peripheral devices required by the oculometer system.

The first three slides viewed by each subject were calibration slides. The subject was asked tc visually fixate a series of three two-letter words appearing in different positions in the visual field fcr approximately five seconds each. This data was used to calculate reference points. These reference points allowed the eye pointing co-ordinates tc be meaningfully interpreted in terms of the pictorial field.

The three stimulus slides of the appropriate set were shown consecutively for twenty seconds each. A blank slide appeared for five seconds. Then each of the three stimulus slides were shown for five seconds each as a brief reminder. At the completion of each of these five second viewing periods, the subject responded to the person perception rating scales for that stimulus person. The list of slide sequence which was used as an explanatory guide for the test subjects is included in Appendix II.

The decision tc use an experimental design involving an initial twenty second viewing of the stimulus slides

followed by a five second "reminder" viewing period was based on the results of a pre-test. The method used in the initial stages of the pre-test required the subject to respond to the person perception instrument after the initial viewing of each stimulus slide. This involved the subject removing their head from the support which maintained it in the proper position while oculometer data was being recorded; responding to the person perception instrument; and then repositioning their head in the support to allow eye movement data to be recorded while they viewed the next stimulus slide. It was found that subjects encountered difficulty in correctly repositioning their heads in the support. This resulted in the collection of invalid data. A revised stimulus presentation method was considered preferable to having an experimenter intervene to ensure correct repositioning of the head for each stimulus slide.

Operational Definitions

1. Attractiveness of face and head - relative ranked position of stimulus facial photographs. Categorized as high, medium or low.

2. Attractiveness of clothed body - relative ranked position of stimulus clothed body photographs. Categorized as high, medium or low.

3. Perceived attractiveness of total unit - rating given to each stimulus condition on the physically attractive - physically unattractive scale of the person perception instrument.

4. Perceived personality traits - rating given to each stimulus condition, on each personality dimension included in the person perception instrument.

5. Perceived social desirability - sum of the ratings of the appropriate items on the person perception instrument for each stimulus condition. The scales from which this index was derived, balanced for directionality were: poised - awkward; strong - weak; interesting - boring; self assertive - submissive; sociable - unsociable; independent - dependent; warm - cold; genuine - artificial; kind - cruel; exciting - dull; sexually warm - sexually cold; sincere - insincere; sensitive - insensitive; enthusiastic -

unenthusiastic; trustworthy - untrustworthy; friendly - unfriendly.

6. Perceived social and professional happiness - sum of the ratings of the appropriate items on the person perception instrument. The particular items involved are the perception of likelihood that the stimulus person will lead an exciting life; experience personal fulfillment; be successful in their chosen occupation.

7. Perceived bourgeois orientation - sum of the ratings of the appropriate items on the person perception instrument. The particular items involved are the perception of likelihood that the stimulus person is, not sympathetic toward oppressed peoples; believes money and wealth are primary ingredients for a happy life; is snobbish and a social status seeker.

8. Visual fixation of the head area - proportion of time spent viewing the head area of the stimulus person as determined from data recorded by the infrared computer based oculometer.

9. Visual fixation of the clothed body - proportion of time spent viewing the clothed body of the stimulus person as determined from data recorded by the infrared computer based oculometer.

Directional Rating of Variables

Table 2. Directional rating of variables

Variable	Range	Low Score	High Score
Perceived Personality Dimensions			
	1-6	altruistic	egoistic
	1-6	bold	shy
	1-6	competitive	cooperative
	1-6	conventional	unconventional
	1-6	emotional	rational
	1-6	enthusiastic	unenthusiastic
	1-6	exciting	dull
	1-6	friendly	unfriendly
	1-6	genuine	artificial
	1-6	independent	dependent
	1-6	interesting	boring
	1-6	kind	cruel
	1-6	modest	vain
	1-6	obvious	subtle
	1-6	outgoing	reserved
	1-6	physically attractive	physically unattractive
	1-6	poised	awkward
	1-6	safe	dangerous
	1-6	self-assertive	submissive
	1-6	sensitive	insensitive
	1-6	serious	humorous
	1-6	sexually prohibitive	sexually permissive
	1-6	sexually warm	sexually cold
	1-6	simple	complex
	1-6	sincere	insincere
	1-6	sociable	unsociable
	1-6	sophisticated	naive
	1-6	stable	changeable
	1-6	strong	weak
	1-6	trustworthy	untrustworthy
	1-6	warm	cold

Variable	Range	Low Score	High Score
Perceived Social Desirability	16-96	high social desirability	low social desirability
Perceived Social and Professional Happiness	3-18	low social and professional happiness	high social and professional happiness
Perceived Bourgeois Orientation	3-18	low bourgeois orientation	high bourgeois orientation

Analysis of Data

The purpose of this study was to investigate the effect of the attractiveness of face and head and the attractiveness of the clothed body in initial contact person perception. Due to the exposure of non-independent groups to the various stimuli conditions however, the possibility that subject variables could influence the results to a greater degree than would otherwise be the case, could not be ignored. To test for subject-group effect as well as for the effect of the variables under investigation, a 3 x 3 Latin Square design fractional replication of a 3 x 3 x 3 factorial experiment was used. The experimental design is diagrammatically represented in Figure 1. The three levels of attractiveness of the face and head constitute the rows. The columns refer to the three levels of attractiveness of the clothed body. The letters within the cells represent the group of subjects who rated each stimulus condition.

The use of a Latin Square design involves the assumption of an additive model. Two-factor and three-factor interactions are assumed to be negligible relative to main order effects. The residual includes all sources of variation which cannot be accounted for by the additivity of the main effects (Winer, 1962). If interactions are indeed negligible, the variance due to

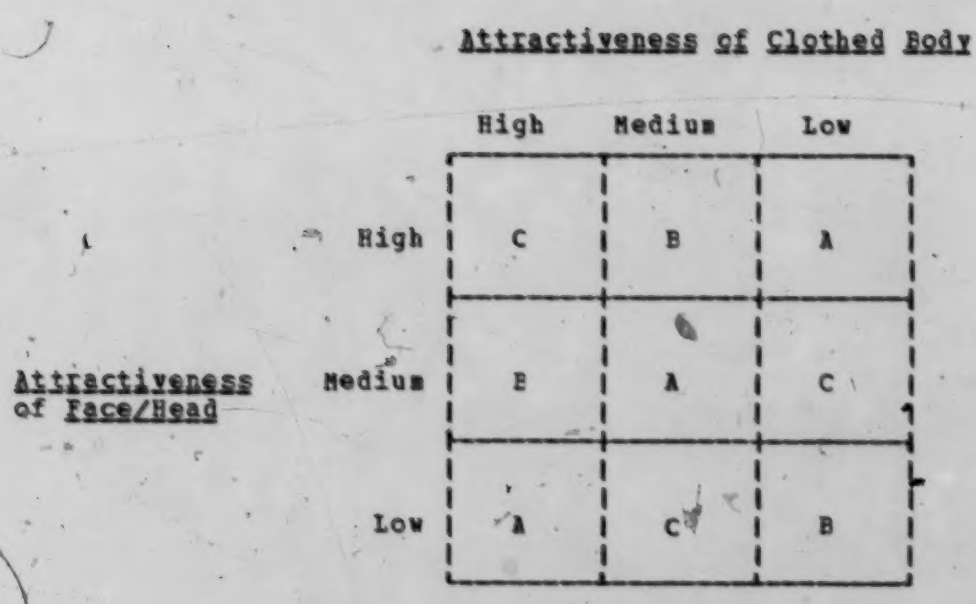
residual sources can be considered to be an estimate of the variance due to experimental error. A partial test of whether interactions are negligible is the ratio of the mean square of the residual to the within cell mean square. If this is significant, the hypothesis that all interactions are negligible cannot be accepted. In such a situation, main effects may be confounded by interaction effects.

The proportion of time in which the face and head were visually fixated and the proportion of time in which the clothed body was visually fixated were computed from the data recorded by the infrared computer based oculometer. The use of the oculometer system at this point in time must involve the recognition that it is an experimental system. Due to a possible variety of subject related and system related variables, it was not possible to collect a complete set of eye movement data for each subject involved in the study. Visual fixation information was therefore computed using the five most complete sets of data in each subject category. Analysis of the eye movement data first involved a change of format from that of the PDP-8/E computer which was used to record the data, to a form which was acceptable to the IBM 360 computer which was used to analyze the data. To compute the fixation information, a program which condensed the data into a 20 x 20 matrix was used. Information gained from

measuring the relative position of the calibration points in terms of the stimulus pictures was used to interpret the matrix.

A 3 x 3 Latin Square analysis of variance was used to test hypotheses 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17. Hypotheses 11, 12, 13 were tested using Pearson product-moment correlation. For statistical results, levels of significance are: $p \leq .001$ is highly significant; $p \leq .01$ is significant; $p \leq .05$ is approaching significance.

Figure 1. 3 x 3 Latin Square experimental design



CHAPTER IV

FINDINGS

This chapter presents the results of the analyses performed on the data obtained from subject background information, the person perception instrument, and the infrared computer based oculometer. The presentation of findings is organized as follows: characteristics of the sample; analysis of variance; Pearson product-moment correlation. The final section of this chapter deals with the acceptance or rejection of the hypotheses.

Characteristics of the Sample

The sample consisted of thirty, female, University of Alberta students. Prospective subjects were approached at various locations on campus and asked if they would be willing to participate in a study concerning first impressions. Background information collected included age, year in university, and faculty. Table 3 presents the frequency distribution of this data broken down in terms of the three subject groups.

Table 3. Frequency distribution of subjects' background data

Characteristics	Frequency		
	Group A	Group B	Group C
Age	N=10	N=10	N=10
19-20	3	4	1
21-22	3	1	1
23-24	3	1	3
25-26	0	1	0
27-28	0	1	2
29-30	0	1	0
31-32	0	1	3
33-34	0	0	0
35-36	1	0	0
Year	N=10	N=10	N=10
1	0	1	0
2	2	1	1
3	2	1	1
4	5	4	4
5	1	0	2
6	0	3	0
Other	0	0	2
Faculty	N=10	N=10	N=10
Education	5	4	4
Graduate Studies	1	3	2
Household Economics	3	0	1
Arts	0	3	0
Science	1	0	0
Nursing	0	0	2
Rehabilitation Medicine	0	0	1

Analysis of Variance

Data was collected for the nine conditions of the 3 x 3 Latin Square experimental design. This data was analyzed for variance with respect to perceived social desirability; perceived social and professional happiness; perceived bourgeois orientation; the individual scales of the person perception instrument (Part I); proportion of time in which the head area was visually fixated; proportion of time in which the clothed body was visually fixated.

The analysis of variance results are presented in Tables 4 to 10 inclusive. All of these tables, except Table 8, are in the form of a sum of scores matrix followed by an analysis of variance table for the variable under consideration. Table 8 presents a summary of the analyses of variance carried out on the individual scales of the person perception instrument. A complete presentation of the sum of scores matrices and the results of the analysis of variance for each of these personality dimensions is included in Appendix III.

The sum matrix of Table 4 indicates that when the high attractive face/head was paired with the high attractive clothed body, this combination was considered to be more physically attractive than was the stimulus condition of medium attractive face/head paired with high attractive

Table 4. Analysis of variance for perception of physical attractiveness

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	15	27	17
	Medium	28	21	24
	Low	35	27	30

Analysis of Variance

	SS	df	MS	F	P
Face/Head	18.29	2	9.14	7.248	.0013
Clothed Body	.82	2	.41	0.326	.7228
Subject Group	6.15	2	3.08	2.439	.0936
Residual	7.02	2	3.51	2.783	.0678
Error	102.20	81	1.26		
Total	134.49	89			

clothed body. This latter combination in turn was considered to be more physically attractive than was the combination of low attractiveness face/head with high attractiveness clothed body. This type of relationship held in the low attractiveness clothed body category as well, with the high facial attractiveness condition being rated higher than was the medium facial attractiveness condition, which was rated higher than the low facial attractiveness condition. Within the medium attractiveness clothed body stimulus group, no clear pattern was evident. The medium face/head condition received the highest physical attractiveness rating while the high and low face/head conditions were rated at the same level of physical attractiveness. The analysis of variance table shows the face/head attractiveness effect to be significant in the perception of physical attractiveness of the total head and clothed body unit.

As indicated in Table 5, each head when paired with the medium attractiveness clothed body was considered to be more bourgeois than when it appeared with either of the other clothed bodies. The high and medium face when paired with the low attractiveness clothed body received the lowest bourgeois orientation ratings in their categories. The low attractiveness face received equal bourgeois ratings in the low and high attractivness clothed body conditions. Attractiveness of the

Table 5. Analysis of variance for perception of bourgecis orientation

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	107	119	82
	Medium	103	110	83
	Low	68	128	68

Analysis of Variance

	SS	df	MS	F	p
Face/Head	34.49	2	17.24	2.541	.0850
Clothed Body	262.68	2	131.34	19.357	.0000
Subject Group	56.09	2	28.04	4.133	.0195
Residual	31.76	2	15.88	2.341	.1027
Error	549.60	81	6.78		
Total	934.63	89			

clothed body was highly significant in the perception of bourgeois orientation.

In the perception of social and professional happiness (Table 6), facial attractiveness exerted a highly significant effect. The sum matrix shows that within the high and low attractiveness clothed body categories, the high face/head condition was expected to experience the greatest amount of social and professional happiness. In the medium atractiveness clothed body category, the medium facial condition was rated slightly higher than the high face/head. This difference in ratings however, was much smaller than the absolute value of the range between adjacent ratings in all categories. The analysis of variance shows the residual effect to be approaching significance, which indicates some interaction effects.

As shown in Table 7, the effect of facial attractiveness was found to be highly significant in the perception of social desirability. A definite pattern is evident in the sum matrix. Within all clothed body attractiveness categories, the high attractiveness face condition was considered to be most socially desirable, the medium attractiveness face received the intermediate social desirability rating, and the low facial condition was perceived to be lowest in social desirability.

Table 6. Analysis of variance for perception of social and professional happiness

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	146	137	152
	Medium	121	141	116
	Low	110	122	125

Analysis of Variance

	SS	df	MS	F	p
Face/Head	108.60	2	54.30	9.679	.0002
Clothed Body	9.26	2	4.631	0.825	.4416
Subject Group	8.46	2	4.23	0.754	.4736
Residual	41.27	2	20.64	3.679	.0296
Error	454.40	81	5.61		
Total	622.00	89			

Table 7. Analysis of variance for perception of social desirability

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	313	381	325
	Medium	457	408	439
	Low	472	480	443

Analysis of Variance

	SS	df	MS	F	p
Face/Head	2565.30	2	1282.65	11.323	.0000
Clothed Body	64.40	2	32.20	0.284	.7533
Subject Group	98.90	2	49.45	0.436	.6478
Residual	298.90	2	149.45	1.319	.2730
Error	9175.81	81	113.28		
Total	12203.30	89			

Table 8 shows the residual effect to be significant for five of the individual personality dimension scales: simple-complex; outgoing-reserved; modest-vain; bold-shy; self assertive-submissive. Because of the possibility of serious confounding of the main effects by interaction effects, these scales were removed from further analysis. There was evidence of interaction effects in an additional six scales. The residual approached significance in the perception of the following dimensions: obvious-subtle; conventional-unconventional; friendly-unfriendly; trustworthy-untrustworthy; sincere-insincere; poised-awkward.

The subject group showed a significant effect in the rating of the emotional-rational and the obvious-subtle dimensions. This variable approached significance in the perception of independence-dependence and altruism-egoism.

Facial attractiveness was found to exhibit an effect in the perception of nine personality dimensions: friendly-unfriendly; poised-awkward; sophisticated-naive; interesting-boring; enthusiastic-unenthusiastic; strong-weak (approaching significance) ; exciting-dull; sexually warm-sexually cold (approaching significance); sociable-unsociable. The effect of the attractiveness of the clothed body approached significance in three of these same scales. These are the first three listed.

Table 8. Significance of experimental variables in the perception of certain personality dimensions

Dimensions	Probability			
	Face/ Head	Cl. Body	Subj. Group	Res.
Altruistic - Egoistic	.0217	.0000	.0254	.1638
Bold - Shy	.0005	.0000	.6804	.0007
Competitive - Cooperative	.0489	.0000	.2756	.1637
Conventional - Unconventional	.0120	.0000	.3896	.0132
Emotional - Rational	.2071	.9226	.0059	.8890
Enthusiastic - Unenthusiastic	.0000	.8094	.8094	.2326
Exciting - Dull	.0000	.0525	.4970	.0525
Friendly - Unfriendly	.0099	.0447	.1022	.0348
Genuine - Artificial	.3832	.0010	.1370	.3358
Independent - Dependent	.0261	.0002	.0353	.6037
Interesting - Boring	.0018	.7798	.8241	.0684
Kind - Cruel	.1824	.0002	.0561	.1986
Modest - Vain	.0028	.0000	.0053	.0000
Obvious - Subtle	.7846	.0000	.0036	.0400
Outgoing - Reserved	.0000	.0000	.6250	.0055
Poised - Awkward	.0028	.0478	.6282	.0170
Safe - Dangerous	.7515	.0000	.5407	.1141
Self-assertive - Submissive	.0000	.0000	.2616	.0005

Dimensions	Probability			
	Face/ Head	Cl. Body	Subj. Group	Res.
Sensitive - Insensitive	.7176	.0000	.2693	.1912
Serious - Humorous	.0603	.6275	.0620	.1600
Sexually Prohibitive - Sexually Permissive	.0003	.0004	.4881	.1162
Sexually Warm - Sexually Cold	.0179	.6056	.9437	.5768
Simple - Complex	.0190	.0183	.5795	.0061
Sincere - Insincere	.5554	.0001	.4246	.0121
Sociable - Unsociable	.0001	.0927	.5179	.2258
Sophisticated - Naive	.0000	.0383	.2826	.1562
Stable - Changeable	.6906	.1165	.3647	.3267
Strong - Weak	.0284	.1492	.5135	.4441
Trustworthy - Untrustworthy	.5435	.0015	.6850	.0428
Warm - Cold	.3324	.0021	.1766	.1202

The attractiveness of the clothed body was a significant factor in the ratings given on twelve of the scales. These scales were: altruistic-egoistic; competitive-cooperative; conventional-unconventional; independent-dependent; warm-cold; genuine-artificial; sensitive-insensitive; safe-dangerous; obvious-subtle; kind-cruel; sincere-insincere; trustworthy-untrustworthy; the first four of these scales also showed the facial attractiveness effect to be approaching significance.

Of the main effects facial attractiveness and clothed body attractiveness, although there were instances where one showed approaching significance when the other was significant, on only one scale were they both found to exert a significant effect. This was on the scale sexually prohibitive-sexually permissive where both were found to have highly significant probability levels.

Tables 9 and 10 present the results of the analysis of variance carried out on the visual fixation data. None of the main effects were found to operate significantly in the proportion of time in which the face/head area was visually fixated, or the proportion of time in which the clothed body was visually fixated.

Table 9. Analysis of variance for visual fixation of the face/head area. (Elements of the sum matrix are percentage of total eye movement readings, summed for five subjects).

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	210.30	293.80	265.60
	Medium	220.60	243.40	293.10
	Low	197.90	246.70	273.00

Analysis of Variance

	SS	df	MS	F	P
Face/Head	98.51	2	49.26	0.145	.8656
Clothed Body	1500.17	2	750.09	2.207	.1247
Subject Group	216.31	2	108.16	0.318	.7294
Residual	135.86	2	67.93	0.200	.8197
Error	12234.40	36	339.84		
Total	14185.30	44			

Table 10 Analysis of variance for visual fixation of the clothed body. (Elements of the sum matrix are percentage of total eye movement readings, summed for five subjects).

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	289.70	206.20	234.40
	Medium	279.40	255.60	206.90
	Low	302.10	253.30	227.00

Analysis of Variance

	SS	df	MS	F	P
Face/Head	99.69	2	49.84	0.146	.8642
Clothed Body	1504.95	2	752.47	2.212	.1241
Subject Group	210.89	2	105.44	0.310	.7354
Residual	133.11	2	66.56	0.196	.8232
Error	12246.90	2	340.19		
Total	14195.50	44			

Pearson Product-Moment Correlation

Association between the variables physical attractiveness, perceived social desirability, perceived social and professional happiness, and perceived bourgeois orientation, were analyzed using Pearson product-moment correlation. Table 11 presents the results of this computation in the form of an intercorrelation matrix showing the correlation of all variables and the levels of significance associated with them.

The intercorrelation matrix shows a highly significant correlation between physical attractiveness and social and professional happiness. When the directionality of these variables was considered, this indicated that as level of perceived physical attractiveness increased, perception of future social and professional happiness increased. A highly significant positive correlation was found between physical attractiveness and social desirability. This meant that as the level of perceived physical atractiveness increased there was an accompanying increase in the perception of degree of social desirability. The other highly significant correlation found was between social and professional happiness and social desirability. This correlation was negative, and when it was interpreted in terms of directionality, it indicated that as perception of degree of social desirability increased, so

did perception of potential social and professional happiness.

Table 11. Intercorrelation matrix for perception of physical attractiveness, perception of bourgeois orientation, perception of social and professional happiness, and perception of social desirability

Correlation Coefficients (r)

	Physical Attr.	Bourgeois Orient.	Social & Prof. Happiness	Social Desir.
Physical Attr.	1.0000	-0.0546	-0.4840	0.6106
Bourgeois Orient.	-0.0546	1.0000	0.0328	0.1942
Social & Prof. Happiness	-0.4840	0.0328	1.0000	-0.6856
Social Desir.	0.6106	0.1942	-0.6856	1.0000

Probabilities Associated with r Values

	Physical Attr.	Bourgeois Orient.	Social & Prof. Happiness	Social Desir.
Physical Attr.	.0000	.6093	.0000	.0000
Bourgeois Orient.	.6093	.0000	.7590	.0666
Social & Prof. Happiness	.0000	.7590	.0000	.0000
Social Desir.	.0000	.0666	.0000	.0000

Conclusions Regarding Hypotheses

1. Based on the results of the analysis of variance performed on data obtained from the physically attractive - physically unattractive scale ratings, Hypothesis 1 was accepted and Hypothesis 2 was rejected.

2. Based on the results of the analyses of variance performed on data obtained from the individual scales of the person perception instrument (Part I), Hypothesis 3 and Hypothesis 4 were both accepted in a number of instances, and rejected in a number of instances. Facial attractiveness was found to be significant in the perception of certain scale dimensions; and attractiveness of the clothed body was found to be significant in the perception of certain scale dimensions. The analysis of a number of the scale ratings showed both variables to be non-significant.

3. Based on the results of the analysis of variance performed on the data obtained from social desirability ratings, Hypothesis 5 was accepted and

Hypothesis 6 was rejected.

4. Based on the results of the analysis of variance performed on the data obtained from social and professional happiness ratings, Hypothesis 7 was accepted and Hypothesis 8 was rejected.

5. Based on the results of the analysis of variance performed on the data obtained from bourgeois orientation ratings, Hypothesis 9 was rejected and Hypothesis 10 was accepted.

6. Based on the results of the Pearson product-moment correlations performed on the data obtained from physical attractiveness ratings, social desirability ratings, social and professional happiness ratings, and bourgeois orientation ratings, Hypothesis 11 was accepted, Hypothesis 12 was accepted, and Hypothesis 13 was rejected.

7. Based on the results of the analysis of variance performed on the data pertaining to the proportion of

time in which the head area was visually fixated and the proportion of time in which the clothed body was visually fixated, Hypothesis 14, Hypothesis 15, Hypothesis 16, and Hypothesis 17 were rejected.

CHAPTER V

INTERPRETATION

The findings will be interpreted in terms of the theoretical framework. The objectives of the study will form the organizational basis of the discussion.

The first objective was to investigate if the attractiveness of face and head, and the attractiveness of the clothed body affected the perceived attractiveness of the total head and clothed body unit. The findings indicated facial attractiveness to be the only significant factor in the perception of physical attractiveness. The importance of the face in providing person perception cues when pictures are used as stimulus material, can perhaps be explained as an extension of the behavior practiced in real life situations where the face is attended to because it can present a wide range of information of a highly expressive nature. The lack of significance of clothing as a perceptual cue is perhaps due to the existence, and acceptance, of a large variation in clothing behavior in our culture. Another possible explanation of these findings is that there could be less consensus regarding the interpretation of clothing characteristics, compared to facial characteristics. The results of this study

support this line of reasoning to some degree. Although inter-judge agreement in the ranking of faces and clothed bodies in terms of attractiveness were both highly significant, the coefficient of concordance (W) and the chi² value associated with it, were considerably smaller for the ranking of the clothed bodies than they were for the ranking of the faces. In terms of the present study, the range in attractiveness of the clothed bodies could have been less than the range in attractiveness of the faces. The faces would then have accounted for the greatest amount of variance between stimulus conditions. Perhaps the use of more extreme examples of clothing behavior would yield somewhat different results.

Hamid (1968) also found judgments of physical attractiveness to be unaffected by clothing. This same study as well did not reveal a significant effect for faces in the perception of the physical attractiveness dimension. No systematic stimulus classification was used in Hamid's study however and it is possible that his stimulus persons represented only a very restricted range in physical attractiveness.

In the perception of physical attractiveness, it was within the medium attractiveness clothed body category that there was lack of conformity to the directional tendencies which were apparent in the other clothed body groups. It is possible that some factor related to this

clothed body, other than attractiveness was operative and was confounding the main effects. The assumption of a confounding characteristic however is a normative judgment. This line of reasoning is explained more fully in the discussion of perception of bourgeois orientation.

The second objective was to investigate if the attractiveness of face and head, and the attractiveness of the clothed body affected the perception of certain first impression dimensions. The major dimensions considered were social desirability, future social and professional happiness, and bourgeois orientation. As well, the individual scales of the person perception instrument (Part I) were analyzed separately.

The attractiveness of the face and head were found to be highly significant in the perception of future social and professional happiness. Clothing perhaps does not operate in the perception of this dimension because due to the effects of mass production and distribution in the fashion industry, clothing no longer acts as a clear indicator of social and occupational status. Harrington (1962) comments on the influence of clothing in obliterating socio-economic appearance differences.

> Clothes make the poor invisible too. America has the best-dressed poverty the world has ever known. For a variety of reasons, the benefits of mass production have been spread much more evenly in this area than in many others. It is much easier in the United States to be decently dressed than it is to be decently housed, fed or doctored. Even with terribly depressed incomes people can look prosperous.
>
> Harrington, 1962, p.5

The results of perception of social and professional happiness show the residual effect to be approaching significance. In Latin Square designs, separate main effect interactions cannot be identified. This type of finding however indicates that experimental designs which allow the measurement of specific interaction effects may provide additional information in this area.

Facial attractiveness was found to be highly significant in the perception of social desirability. It seems reasonable to suggest that the explanations offered for the the significant effect of face/head attractiveness in the perception of physical attractiveness could also be applicable to the perception of social desirability. The direction of the facial attractiveness effect was quite obvious. In all clothing categories, the high facial attractiveness condition was considered most socially desirable, the medium face condition was rated second, and the low face condition was rated least socially desirable. This directionality essentially replicates that which is apparent in the results of the perception of physical

attractiveness. A possible relationship is thus suggested. This possibility was investigated using Pearson product-moment correlation.

In the perception of bourgeois orientation, the results showed a highly significant effect for clothed body attractiveness. Within each facial category, it was the medium clothed body attractiveness condition which received the highest rating on this dimension. A variable which was not completely controlled in the selection of stimulus material was that of stance. It was the medium attractiveness clothed body category which deviated most markedly in this respect. The question which suggests itself is whether such characteristics are confounded with attractiveness or are aspects of it. In reference to human physical attractiveness, Dermer (in press) has noted that reasons for considering one characteristic a confound, and another an aspect of attractiveness presupposes a theory of beauty. In the absence of such a theory, only normative judgments of attractivenss can be made.

Another possible reason why facial attractiveness was not found to operate significantly in the perception of bourgeois orientation could be that the most attractive stimulus face was not representative of a particularly high level of physical attractiveness. Dermer (in press) suggests that physically attractive females may be

considered bourgeois due to their perceived ability to attract high status males who control many of the rewards in our society, as well as the use of highly attractive models in mass media advertisements. Perhaps none of the stimuli persons in the present study were considered to be of an attractiveness level which would make the identification of them with such images particularly likely.

The subject-group effect was found to be approaching significance in the perception of bourgeois orientation. This indicates that some subject characteristics may have been playing a role in the bourgeois orientation ratings. No perceiver variables were systematically considered in the present study, although the experimenter exercised subjective caution to prevent the selection of a sample which was skewed in terms of extreme levels of physical attractiveness. It seems likely that the controlled study of certain perceiver variables may prove to be particularly useful in the understanding of person perception and the role which physical attractiveness and the clothed body play in that process.

The separate scales comprising Part I of the person perception instrument were analyzed separately. An individual interpretation of each scale was not deemed to be particularly fruitful so discussion on a somewhat broader scale is presented. Facial attractiveness was

found to exert a significant effect on the perception of a number of the scale dimensions; attractiveness of the clothed body was found to operate significantly in the perception of certain dimensions. There were also occurrences where neither of these main effects were found to be significant. In some instances an additive model seemed adequate to account for the combined effect of both facial and clothed body attractiveness. However, in other cases, the residual reached significance, which was an indication that interaction effects require consideration as well. The subject-group effect was apparent in the ratings of a number of the scales. This suggests that certain perceiver variables merit investigation. The conclusion reached regarding the results of the analysis of the various individual scales is that the influence which the experimental variables exerted was dependent upon which dimension was being considered. This deduction is analogous to that arrived at by Conner (1974) in relation to the effect of clothing in the perception of certain characteristics.

The third objective was to investigate perceived physical attractiveness of the total unit in terms of its correlation with certain first impression dimensions. The dimensions considered were social desirability, social and professional happiness, and bourgeois orientation. The correlation results indicated that as the physical

attractiveness level of the stimulus persons increased, they were considered to be more socially desirable and were expected to experience more social and professional happiness. This finding was in strong agreement with the "what is beautiful is good" stereotype (Dion, Berscheid, & Walster, 1972).

The correlation between perception of bourgeois orientation and physical attractiveness was not significant. A possible reason for this result could be that the range in stimulus physical attractiveness in this study was not as great as that in Dermer's (in press) study where physically attractive female stimulus persons were perceived to be bourgeois.

The fourth objective of the study was to investigate if the attractiveness of face and head, and the attractiveness of the clothed body affected visual fixation patterns. The operationalization of this objective involved a calculation of the proportion of time in which the face/head area was fixated, and the proportion of time in which the clothed body was visually fixated. This information was then analyzed for variance with respect to the experimental variables. No significant effects were found. It was noted however that the mean square of the error, which formed the denominator of the F ratio, was quite large. In an attempt to investigate possible reasons for this high degree of

experimental error, a calculation using a measure of dispersion of within subject fixation behavior, and between subject fixation behavior was carried out. It was found that the mean standard deviation of the same subject viewing different stimulus persons was 14.2, whereas the mean standard deviation of different subjects viewing the same stimulus was 35.3. This seems to indicate that individual factors perhaps represent a more meaningful approach to the study of eye movements than does group information. The individual characteristics of eye movements could be considered in a number of ways. It is possible that an analysis of fixation densities using a more refined stimulus partition than that employed in the present study would yield meaningful results. Another approach could be an investigation of individual scanpaths (Noton and Stark, 1971).

The results of this study generally show that first impressions can be formed very rapidly and be derived from very limited stimulus information. Extreme caution must be exercised however in generalizing these findings to any wider context. It is necessary to note that the sample used in this study was not random. Another factor that must be remembered is that an extremely limited stimulus information situation was employed. Due to this restriction and the presence of an intervening communication medium (projected photographs), it was

indirect person perception which was being studied rather than the direct process which operates in actual interpersonal situations (Warr and Knapper, 1968). In real life direct person perception situations much more information is usually available. Body movements, facial expressions, the sound and content of speech; all of these provide additional input data to the person perception process. There are instances in real life however where indirect person perception occurs. Appearance is one of the main sources from which impressions of persons presented in the mass media are derived. Some job application forms request photographs and these are considered in assessing the candidate for possible employment.

In situations where appearance represents only part of the information which is available about a person, it is highly likely that physical attractiveness and clothing variables would play a proportionately much smaller role in impression formation. We cannot however conclude that their effect would be inconsequential.

CHAPTER VI

SUMMARY AND RECOMMENDATIONS

Summary

The purpose of this study was to investigate the effect of the attractiveness of the face and head, and the attractiveness of the clothed body in first impression formation. As well, the influence of these variables on visual fixation patterns was examined.

The theoretical framework for this study involved the operation of naive implicit theories of personality (Bruner & Tagiuri, 1954), or stereotypes (Hastorf, Schneider & Polefka, 1970) in initial contact person perception. Physical attractiveness has been found to be a significant factor in a wide range of social behavior, including first impressions. It has been suggested that the potent influence of this variable can be attributed to the existence of a physical attractiveness stereotype (Miller, 1970a; Dion, Berscheid & Walster, 1972; Dermer, in press). Clothing is another variable which has been found to influence first impressions (Hoult, 1954; Douty, 1963; Hamid, 1968; Hamid, 1969; Thomas, 1971; Conner, 1974).

Visual information is a very important source of data in initial contact person perception. Eye fixations are relevant parameters for the study of visual perception (Gould & Schaffer, 1965). Eye fixations are not evenly distributed over the total visual field. The areas which receive a high density of eye fixations are those which are high in informativeness (Buswell, 1935; Yarbus, 1967; Mackworth & Morandi, 1967; Schissler, 1969).

The sample was non random and consisted of thirty, female, University of Alberta students. Participants recorded their impressions of a number of stimulus person pictures, each representing a systematic pairing of faces of varying levels of attractiveness and clothed bodies of varying levels of attractiveness. Impressions were recorded using a modified form of the semantic differential instruments developed by Dion, Berscheid & Walster (1972) and Dermer (in press). Eye movement data was recorded as the subjects viewed the stimulus persons using the Petruk and Hunka (1974) infrared computer based oculometer. The data were analyzed using a 3 x 3 Latin Square analysis of variance and Pearson product-moment correlation.

The statistical results showed facial attractiveness to be a significant factor in the perception of, physical attractiveness of the total unit, social and professional happiness, and social desirability. Attractiveness of the

clothed body was found to exert a significant effect in the perception of bourgeois orientation. The analyses of variance performed or a number of the individual scale ratings indicated facial attractiveness to be a significant factor in the perception of certain personality dimensions; and attractiveness of the clothed body to be a significant factor in the perception of certain personality dimensions. The operation of perceiver variables was indicated in a number of instances by the significance of the subject-group effect. In some cases an additive model seemed adequate to explain combined main order effects. In other instances however, there was evidence of interaction. None of the experimental variables were found to be significant in the proportion of time in which the head area was visually fixated, or the proportion of time in which the clothed body was visually fixated. The correlation results indicated that as level of physical attractiveness increased, so did the perception of social and professional happiness and social desirability.

Recommendations

On the basis of this study, a number of

recommendations for further research were formulated:

1. The experimental design of this study did not allow specific main effect interactions to be identified. In the perception of a number of first impression dimensions however, the residual was found to be significant, indicating that interaction effects were operating. It is suggested that these effects be thoroughly investigated.

2. Perceiver variables were not systematically considered in this study. The findings show that in a number of instances the subject-group variable was exerting a significant effect. The results of other studies where related experimental variables were considered (Jones, 1969; Thomas, 1971; Dermer, in press) have indicated that subject characteristics can influence the perception of certain personality dimensions. Based on these findings, it is suggested that the effect of perceiver variables be investigated within the theoretical context of the present study.

3. The results of the analysis of the eye movement data

suggest that an area which merits study is that concerned with the individual subject factors involved in visual response to human forms.

4. It is suggested that the operation of the experimental variables considered in the present study be investigated using a field study approach. This would permit a greater degree of generalization to real life situations.

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APPENDIX I

This study is concerned with first impression formation. You will be shown a picture of a person for a short period of time. You will then be asked to record your impression of that person using a set of descriptive scales. Respond to all scales. Once you have made a decision about any single scale, go on to the next. Make each item a separate and independent judgment. Do not look back at previous responses, nor change any answers once you have made a decision. Work at a fairly high speed. Do not worry or puzzle over individual items. It is your first impressions, the immediate "feelings" that we want. On the other hand, please do not be careless, because we want your true impressions.

The scales which you will be using are included for you to look at. A copy of the instructions will appear with the scales each time you are asked to use them.

In this study we are also interested in the way in which people look at pictures of other people. As you look at each picture, a camera will be taking pictures of your eye. You will be almost unaware that this is going on, however it is important that your head be positioned in a certain manner when you look at each picture. Your head will not be restrained in any way but it will be positioned so that it is leaning against a supporting structure. Please try to maintain this position while you are looking at the stimulus pictures.

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bold	___	___	___	___	___	___	shy
sensitive	___	___	___	___	___	___	insensitive
physically attractive	___	___	___	___	___	___	physically unattractive
dependent	___	___	___	___	___	___	independent
enthusiastic	___	___	___	___	___	___	unenthusiastic
sexually prohibitive	___	___	___	___	___	___	sexually permissive
exciting	___	___	___	___	___	___	dull
sociable	___	___	___	___	___	___	unsociable
self-assertive	___	___	___	___	___	___	submissive
sophisticated	___	___	___	___	___	___	naive
obvious	___	___	___	___	___	___	subtle
serious	___	___	___	___	___	___	humorous
interesting	___	___	___	___	___	___	boring
safe	___	___	___	___	___	___	dangerous
trustworthy	___	___	___	___	___	___	untrustworthy
genuine	___	___	___	___	___	___	artificial
sincere	___	___	___	___	___	___	insincere
warm	___	___	___	___	___	___	cold

competitive	___	___	___	___	___	___	cooperative
sexually warm	___	___	___	___	___	___	sexually cold
stable	___	___	___	___	___	___	changeable
strong	___	___	___	___	___	___	weak
conventional	___	___	___	___	___	___	unconventional
outgoing	___	___	___	___	___	___	reserved
friendly	___	___	___	___	___	___	unfriendly
kind	___	___	___	___	___	___	cruel
simple	___	___	___	___	___	___	complex
poised	___	___	___	___	___	___	awkward
altruistic	___	___	___	___	___	___	egoistic
modest	___	___	___	___	___	___	vain
emotional	___	___	___	___	___	___	rational

PART II

On the scales on the following page, comment on the probability that the statement given is representative of the person you have just seen. Check the degree of likelihood which most adequately expresses your feelings.

EXAMPLE:

Is kind to animals

				X	
extremely unlikely	very unlikely	somewhat unlikely	somewhat likely	very likely	extremely likely

RESPOND TO ALL ITEMS

1. Is sympathetic toward oppressed peoples (the poor, the disadvantaged, etc.)

extremely unlikely	very unlikely	somewhat unlikely	somewhat likely	very likely	extremely likely

2. Will lead an exciting life

extremely unlikely	very unlikely	somewhat unlikely	somewhat likely	very likely	extremely likely

3. Will experience personal fulfilment

extremely unlikely	very unlikely	somewhat unlikely	somewhat likely	very likely	extremely likely

4. Believes that money and wealth are primary ingredients for a happy life

extremely unlikely	very unlikely	somewhat unlikely	somewhat likely	very likely	extremely likely

5. Is snobbish and is a social status seeker

extremely unlikely	very unlikely	somewhat unlikely	somewhat likely	very likely	extremely likely

6. Will be successful in her chosen occupation

extremely unlikely	very unlikely	somewhat unlikely	somewhat likely	very likely	extremely likely

APPENDIX II

SEQUENCE OF SLIDES

1. Blank
2. Calibration 1 (5 seconds)
3. Calibration 2 (5 seconds)
4. Calibration 3 (5 seconds)
5. Person 1 (20 seconds)
6. Person 2 (20 seconds)
7. Person 3 (20 seconds)
8. Blank (5 seconds)
9. Person 1 (5 seconds)
10. 1 - remove head from support and record your impression of Person 1 by responding to the scales in Folder 1. When you have completed this, put your head back in the rest to indicate that you are ready for the next slide.
11. Person 2 (5 seconds)
12. 2 - remove head from support and record your impression of Person 2 by responding to the scales in Folder 2. When you have completed this, put your head back in the rest to indicate that you are ready for the next slide.
13. Person 3 (5 seconds)
14. 3 - remove head from support and record your impression of Person 3 by responding to the scales in Folder 3.

Finished

APPENDIX III

Altruistic - Egoistic

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	40	46	29
	Medium	39	36	24
	Low	24	42	26

Analysis of Variance

	SS	df	MS	F	p
Face/Head	9.27	2	4.63	4.018	.0217
Clothed Body	33.80	2	16.90	14.656	.0000
Subject Group	8.87	2	4.43	3.845	.0254
Residual	4.27	2	2.13	1.850	.1638
Error	93.40	81	1.15		
Total	149.60	89			

Bold - Shy

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	28	19	25
	Medium	27	26	46
	Low	46	21	43

Analysis of Variance

	SS	df	MS	F	p
Face/Head	25.49	2	12.74	8.239	.0005
Clothed Body	41.09	2	20.54	13.281	.0000
Subject Group	1.15	2	.58	0.374	.6804
Residual	24.62	2	12.31	7.958	.0007
Error	125.30	81	1.55		
Total	217.65	89			

Competitive - Cooperative

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	31	19	39
	Medium	33	24	45
	Low	48	21	45

Analysis of Variance

	SS	df	MS	F	p
Face/Head	10.42	2	5.21	3.134	.0489
Clothed Body	75.75	2	37.88	22.777	.0000
Subject Group	4.35	2	2.18	1.309	.2756
Residual	6.15	2	3.08	1.851	.1637
Error	134.70	81	1.66		
Total	231.39	89			

Conventional - Unconventional

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	36	43	32
	Medium	34	37	18
	Low	18	42	23

Analysis of Variance

	SS	df	MS	F	p
Face/Head	14.49	2	7.24	4.676	.0120
Clothed Body	42.02	2	21.01	13.561	.0000
Subject Group	2.95	2	1.48	0.954	.3896
Residual	14.15	2	7.08	4.568	.0132
Error	125.50	81	1.55		
Total	199.12	89			

Emotional - Rational

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	25	36	37
	Medium	33	36	24
	Low	42	32	36

Analysis of Variance

	SS	df	MS	F	p
Face/Head	5.75	2	2.88	1.605	.2071
Clothed Body	.29	2	.14	0.081	.9226
Subject Group	19.62	2	9.81	5.473	.0059
Residual	.42	2	.21	0.118	.8890
Error	145.20	81	1.79		
Total	171.29	89			

Enthusiastic - Unenthusiastic

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	13	18	14
	Medium	24	23	28
	Low	28	29	24

Analysis of Variance

	SS	df	MS	F	p
Face/Head	24.80	2	12.40	11.273	.0000
Clothed Body	.47	2	.23	0.212	.8094
Subject Group	.47	2	.23	0.212	.8094
Residual	3.27	2	1.63	1.485	.2326
Error	89.10	81	1.10		
Total	118.10	89			

Exciting - Dull

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	23	20	22
	Medium	29	29	36
	Low	44	30	37

Analysis of Variance

	SS	df	MS	F	p
Face/Head	36.07	2	18.03	18.168	.0000
Clothed Body	6.07	2	0.03	3.056	.0525
Subject Group	1.40	2	.70	0.705	.4970
Residual	6.07	2	3.03	3.056	.0525
Error	80.40	81	.99		
Total	130.00	89			

Friendly - Unfriendly

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	16	20	15
	Medium	28	22	20
	Low	18	32	21

Analysis of Variance

	SS	df	MS	F	P
Face/Head	8.47	2	4.23	4.884	.0099
Clothed Body	5.60	2	2.80	3.231	.0447
Subject Group	4.07	2	2.03	2.346	.1022
Residual	6.07	2	3.03	3.500	.0348
Error	70.20	81	.87		
Total	94.40	89			

Genuine - Artificial

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	27	34	18
	Medium	30	26	21
	Low	26	43	22

Analysis of Variance

	SS	df	MS	F	p
Face/Head	3.82	2	1.91	0.970	.3832
Clothed Body	29.42	2	14.71	7.471	.0010
Subject Group	8.02	2	4.01	2.037	.1370
Residual	4.36	2	2.18	1.106	.3358
Error	159.50	81	1.97		
Total	205.12	89			

Independent - Dependent

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	16	23	40
	Medium	30	35	43
	Low	39	23	46

Analysis of Variance

	SS	df	MS	F	p
Face/Head	18.69	2	9.34	3.813	.0261
Clothed Body	47.29	2	23.64	9.648	.0002
Subject Group	17.09	2	8.54	3.487	.0353
Residual	2.49	2	1.24	0.508	.6037
Error	198.50	81	2.45		
Total	284.06	89			

Interesting - Boring

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	18	24	22
	Medium	31	26	32
	Low	36	29	28

Analysis of Variance

	SS	df	MS	F	p
Face/Head	16.47	2	8.23	6.847	.0018
Clothed Body	.60	2	.30	0.249	.7798
Subject Group	.47	2	.23	0.194	.8241
Residual	6.67	2	3.33	2.772	.0684
Error	97.40	81	1.20		
Total	121.60	89			

Kind - Cruel

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	22	26	15
	Medium	30	24	18
	Low	22	32	21

Analysis of Variance

	SS	df	MS	F	P
Face/Head	2.60	2	1.30	1.738	.1824
Clothed Body	13.87	2	6.93	9.267	.0002
Subject Group	4.47	2	2.23	2.985	.0561
Residual	2.47	2	1.23	1.649	.1986
Error	60.60	81	.75		
Total	84.00	89			

Modest - Vain

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	37	46	27
	Medium	37	39	15
	Low	14	47	22

Analysis of Variance

	SS	df	MS	F	p
Face/Head	12.82	2	6.41	6.317	.0028
Clothed Body	79.29	2	39.64	39.065	.0000
Subject Group	11.35	2	5.68	5.595	.0053
Residual	22.15	2	11.08	10.916	.0000
Error	82.20	81	1.01		
Total	207.82	89			

Obvious - Subtle

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	26	28	44
	Medium	31	24	37
	Low	44	17	36

Analysis of Variance

	SS	df	MS	F	P
Face/Head	.69	2	.34	0.243	.7846
Clothed Body	39.82	2	19.91	14.061	.0000
Subject Group	17.09	2	8.54	6.034	.0036
Residual	9.49	2	4.74	3.350	.0400
Error	114.70	81	1.42		
Total	181.79	89			

Outgoing - Reserved

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	17	14	23
	Medium	28	22	43
	Low	43	21	38

Analysis of Variance

	SS	df	MS	F	p
Face/Head	43.40	2	21.70	16.200	.0000
Clothed Body	38.07	2	19.03	14.209	.0000
Subject Group	1.27	2	.63	0.473	.6250
Residual	14.87	2	7.43	5.549	.0055
Error	108.50	81	1.34		
Total	206.10	89			

Poised - Awkward

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	15	19	16
	Medium	24	14	31
	Low	33	21	29

Analysis of Variance

	SS	df	MS	F	p
Face/Head	18.29	2	9.14	6.309	.0028
Clothed Body	9.15	2	4.58	3.158	.0478
Subject Group	1.35	2	.68	0.468	.6282
Residual	12.42	2	6.21	4.285	.0170
Error	117.40	81	1.45		
Total	158.62	89			

Safe - Dangerous

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	22	29	19
	Medium	27	30	19
	Low	21	38	16

Analysis of Variance

	SS	df	MS	F	p
Face/Head	.69	2	.34	0.287	.7515
Clothed Body	31.49	2	15.74	13.107	.0000
Subject Group	1.49	2	.74	0.620	.5407
Residual	5.36	2	2.68	2.229	.1141
Error	97.30	81	1.20		
Total	136.32	89			

Self-assertive - Submissive

Sum Matrix

Attractiveness of Face/Head	Attractiveness of Clothed Body: High	Medium	Low
High	15	15	24
Medium	26	22	43
Low	43	17	40

Analysis of Variance

	SS	df	MS	F	p
Face/Head	39.62	2	19.81	16.425	.0000
Clothed Body	47.09	2	23.54	19.520	.0000
Subject Group	3.29	2	1.64	1.363	.2616
Residual	20.35	2	10.18	8.438	.0005
Error	97.70	2	1.21		
Total	208.06	89			

Sensitive - Insensitive

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	24	33	19
	Medium	34	31	16
	Low	27	35	20

Analysis of Variance

	SS	df	MS	F	P
Face/Head	.69	2	.34	0.333	.7176
Clothed Body	33.69	2	16.84	16.301	.0000
Subject Group	2.75	2	1.38	1.333	.2693
Residual	3.49	2	1.74	1.688	.1912
Error	83.70	81	1.03		
Total	124.32	89			

Serious - Humorous

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	36	36	35
	Medium	35	36	24
	Low	29	25	33

Analysis of Variance

	SS	df	MS	F	p
Face/Head	6.75	2	3.38	2.907	.0603
Clothed Body	1.09	2	.54	0.469	.6275
Subject Group	6.69	2	3.34	2.879	.0620
Residual	4.35	2	2.18	1.875	.1600
Error	94.10	81	1.16		
Total	112.99	89			

Sexually Prohibitive - Sexually Permissive

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	39	46	38
	Medium	35	38	23
	Low	25	38	28

Analysis of Variance

	SS	df	MS	F	p
Face/Head	19.75	2	9.88	8.812	.0003
Clothed Body	19.09	2	9.54	8.514	.0004
Subject Group	1.62	2	.81	0.724	.4881
Residual	4.95	2	2.48	2.210	.1162
Error	90.80	81	1.12		
Total	136.22	89			

Sexually Warm - Sexually Cold

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	23	26	21
	Medium	28	31	30
	Low	34	32	29

Analysis of Variance

	SS	df	MS	F	p
Face/Head	11.35	2	5.68	4.227	.0179
Clothed Body	1.35	2	.68	0.505	.6056
Subject Group	.15	2	.08	0.058	.9437
Residual	1.49	2	.74	0.554	.5768
Error	108.80	81	1.34		
Total	123.16	89			

Simple - Complex

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	42	47	46
	Medium	42	41	28
	Low	29	47	36

Analysis of Variance

	SS	df	MS	F	p
Face/Head	12.29	2	6.14	4.161	.0190
Clothed Body	12.42	2	6.21	4.206	.0183
Subject Group	1.62	2	.81	0.549	.5795
Residual	16.02	2	8.01	5.426	.0061
Error	119.60	81	1.48		
Total	161.96	89			

Sincere - Insincere

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	23	27	20
	Medium	32	29	17
	Low	19	34	19

Analysis of Variance

	SS	df	MS	F	p
Face/Head	1.15	2	.58	0.592	.5554
Clothed Body	19.29	2	9.64	9.888	.0001
Subject Group	1.69	2	.84	0.866	.4246
Residual	9.09	2	4.54	4.660	.0121
Error	79.00	81	.97		
Total	110.22	89			

Sociable - Unsociable

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	14	16	17
	Medium	27	18	28
	Low	27	23	27

Analysis of Variance

	SS	df	MS	F	p
Face/Head	17.69	2	8.84	10.773	.0001
Clothed Body	4.02	2	2.01	2.450	.0927
Subject Group	1.08	2	.54	0.663	.5179
Residual	2.48	2	1.24	1.516	.2258
Error	66.50	81	.82		
Total	91.79	89			

Sophisticated - Naive

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	17	20	20
	Medium	32	24	33
	Low	40	24	37

Analysis of Variance

	SS	df	MS	F	p
Face/Head	34.49	2	17.24	11.384	.0000
Clothed Body	10.28	2	5.14	3.396	.0383
Subject Group	3.89	2	1.94	1.283	.2826
Residual	5.76	2	2.88	1.900	.1562
Error	122.70	81	1.51		
Total	177.12	89			

Stable - Changeable

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	31	39	31
	Medium	34	30	27
	Low	26	42	30

Analysis of Variance

	SS	df	MS	F	p
Face/Head	1.75	2	.88	0.372	.6906
Clothed Body	10.42	2	5.21	2.208	.1165
Subject Group	4.82	2	2.41	1.021	.3647
Residual	5.35	2	2.68	1.134	.3267
Error	191.20	81	2.36		
Total	213.56	89			

Strong - Weak

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	23	24	23
	Medium	31	22	35
	Low	34	28	36

Analysis of Variance

	SS	df	MS	F	p
Face/Head	13.42	2	6.71	3.723	.0284
Clothed Body	7.02	2	3.51	1.948	.1492
Subject Group	2.42	2	1.21	0.672	.5135
Residual	2.95	2	1.48	0.820	.4441
Error	146.00	81	1.80		
Total	171.82	89			

Trustworthy - Untrustworthy

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	22	26	20
	Medium	31	28	18
	Low	21	34	19

Analysis of Variance

	SS	df	MS	F	P
Face/Head	1.40	2	.70	0.614	.5435
Clothed Body	16.07	2	8.03	7.050	.0015
Subject Group	.87	2	.43	0.380	.6850
Residual	7.47	2	3.73	3.276	.0428
Error	92.30	81	1.14		
Total	118.10	89			

Warm - Cold

Sum Matrix

		Attractiveness of Clothed Body		
		High	Medium	Low
Attractiveness of Face/Head	High	20	30	19
	Medium	30	27	23
	Low	21	38	22

Analysis of Variance

	SS	df	MS	F	p
Face/Head	2.95	2	1.48	1.117	.3324
Clothed Body	17.62	2	8.81	6.658	.0021
Subject Group	4.69	2	2.34	1.771	.1766
Residual	5.75	2	2.88	2.175	.1202
Error	107.20	81	1.32		
Total	138.22	89			